

Amendments to the Figures

Kindly delete Figure 24. Kindly replace Figure 25 and Figure 26 with the replacement sheets included herein. Those replacement sheets renumber Figure 25 and Figure 26 as Figure 24 and Figure 25, respectively. No other changes are made. Marked-up versions of these figures are available on request. Entry of the amendment is respectfully requested.

Remarks

I. Status

Following entry of the amendments included herein, claims 19, 20, and 22-24 are pending, with claims 1-18, 21, and 25-32 cancelled and claims 19 and 24 amended herein. Support for the amendments to claims 19 and 24 is found in the first paragraph beginning on page 9 of the application as filed.

Applicants thank the Examiner for withdrawal of the objections to the specification, priority claim, and abstract.

II. Objections

The Office Action objects to the specification because Figure 24 shows translation of nucleotides AT into isoleucine. Figure 24 is deleted herein. The specification is also amended to remove any reference to Figure 24. The figures previously numbered Figure 25 and Figure 26 are amended herein to be the new Figure 24 and Figure 25. This objection is moot.

III. Claim Rejections - 35 U.S.C. § 103

Claims 19-20, 22, and 24 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Pisabarro, *et al.*, in view of Labarre, *et al.* and Hirano, *et al.* The Office Action cites Pisabarro, *et al.*, for the proposition that "it is likely that ORF2 is also translated in *Corynebacteria* in lysine biosynthesis." Labarre, *et al.* is cited for a "reliable and general method" for inserting genes into a chromosome of *Corynebacterium*. Hirano, *et al.* is cited for noting that "L-lysine productivity" can be "obtained by the means of amplification of genes for the L-lysine biosynthesis."

The cited publications do not make out a prima facie case of obviousness. In *Graham v. John Deere*, 383 U.S. 1, 17-148 (1966) the U.S. Supreme Court established a four factor inquiry

necessary to establish a prima facie case of obviousness, which was reaffirmed in KSR

International Co. v Teleflex Inc., 550 U.S. \_\_\_\_\_ (2007). The four factors are (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary indicia of non-obviousness such as meeting a long felt need, succeeding where others have failed, success in the market, etc. This analysis is applied to the invention as whole – meaning each and every of the claims in the combination recited. Applicants respectfully submit that the Office Action overlooks at least the factors emphasized in italics and therefore has not established a prima facie case of obviousness.

There is no content in any of the cited documents that would lead one to believe that their combination would be successful. Neither the scope and contents of the prior art, nor the differences between the prior art and the claims in issue align to allow creation of a *prima facie* case of obviousness. As Applicants previously noted, the mere listing of ORF2 in Pisabarro, combined with the blanket statement that it is "likely" that the open reading frame is "also translated" is not a suggestion that the translation is involved in amino acid production, or that increasing translation of the open reading frame would increase amino acid production.

There is no indication that there would be any actual use for translating the ORF2, whether for enhanced amino acid production or otherwise. The scope of the cited art is therefore quite different from the scope of the claims. Given the number of open reading frames present in the genome of any given organism, a mere statement that one open reading frame might be translated, and for an unknown effect, does not give one skilled in the art the impetus to combine the cited art to arrive at the invention.

The claimed subject matter is different from anything in the cited art. The amino acid sequence of SEQ ID NO: 19 is a truncation of the full amino acid that would be predicted from the nucleotide sequence of ORF2. Claim 19, as amended, requires that an isolated polynucleotide molecule comprise a nucleotide sequence encoding the polypeptide consisting essentially of the amino acid sequence in SEQ ID NO:19. Lack of "comprising" language would exclude an isolated polynucleotide molecule encoding the entire polypeptide encoded by non-truncated ORF2.

For the reasons given, no *prima facie* case of obviousness exists. Applicants request that the rejection be removed, and that the claims be reconsidered and allowed.

CONCLUSION

Applicants believe that a full and complete response to the outstanding office action has been made herein. In the event that further discussion might resolve any outstanding issues with the claims, the Examiner is invited to telephone the undersigned at the number provided below. Consideration and early allowance of all of the pending claims is respectfully requested.

Respectfully submitted,



Dated: August 15, 2007

Duane A. Stewart III  
Registration No. 54,468  
BUCHANAN INGERSOLL & ROONEY PC  
One Oxford Centre  
301 Grant Street  
Pittsburgh, Pennsylvania 15219  
ph: (412) 562-1622  
fx: (412) 562-1041